REMARKS

In the Office Action dated December 10, 2007,[1] the Examiner objected to the Specification; objected to claims 8, 10, 11, and 13 under 37 C.F.R. § 1.75(a); and rejected claims 1-25 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,360,016 to Shen et al. ("Shen"), in view of U.S. Patent Application Publication 2003/0081852 A1 to Pohjola ("Pohjola"), U.S. Patent 6,192,188 to Dierke ("Dierke"), U.S. Patent Application Publication 2003/0093452 A1 to Zhou ("Zhou"), and U.S. Patent 3,679,821 to Schroeder ("Shroeder").

Applicants amend claims 1, 2, and 7-15, and cancel claims 3-6 and 16-25, without prejudice or disclaimer, subject matter from claims 3-6 being incorporated into independent claims 1 and 14. Claims 1, 2, and 7-15 remain pending.

Regarding the objection to the Specification, Applicants have amended the Abstract and Title for format and clarity. Furthermore, Applicants have amended the specification to correct the informality noted by the Examiner. Accordingly, Applicants respectfully request that the Examiner withdraw the objection to the Specification.

Regarding the objection to claims 8, 10, 11, and 13 under 37 C.F.R. § 1.75(a), Applicants have amended the claims in accordance with § 1.75(a) and therefore respectfully request that the Examiner withdraw the objection to the claims.

Applicants respectfully traverse the rejection of claims 1-25 under 35 U.S.C. § 103(a) as being unpatentable over Shen in view of Pohjola, Dierke, Zhou, and Shroeder.

[1] The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

Independent claim 1, for example, recites "intra-image prediction means for adaptively changing block size used for prediction based on a chroma format signal . . . for generating a prediction image . . . when the chroma format signal is 4:2:0 format . . . adaptively changes the block size and generates the prediction image on an 8 × 8 pixel basis, when the chroma format signal is 4:2:2 format . . . adaptively changes the block size and generates the prediction image on an 8 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in a longitudinal direction, and when the chroma format signal is 4:4:4 format . . . adaptively changes the block size and generates the prediction image on a 16 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in longitudinal and lateral direction." (emphasis added). Shen, Pohjola, Dierke, Zhou, and Shroeder, taken alone or in combination, fail to teach the claimed prediction means.

The Examiner acknowledges that Shen and Pohjola do not teach or suggest at least the claimed prediction means for adaptively changing block size based on resolution of a color signal, relying on Dierke. *See* Office Action at 5.

Dierke discloses "a digital audio/video recording system having a programmable video encoder capable of receiving an encoding algorithm from an external source . . . the system accepts recordable DVD disks having a read-only sector for storing customized video encoding algorithms and programs the programmable video encoder with the customized video encoding algorithms prior to encoding and recording a video signal on the disk." Dierke, col. 2, ll. 15-22. The system "compresses the audio and video signals using a software algorithm stored in instruction memory . . . [t]he software algorithm may come from a variety of sources . . . [and] may be provided in a red-only sector on a recordable DVD disk." Dierke, col. 5, ll. 27-32.

While Dierke discloses different samplings of video signals, "[o]nce the picture types have been defined, the encoder may estimate motion vectors for each 16 by 16 macroblock in a picture . . . [a] macroblock consists of a 16-pixel by 16-line portion . . . and several spatially corresponding 8 by 8 blocks of chrominance components Cr and Cb. The number of blocks of chrominance values depends upon which particular format is used." Dierke, col. 6, line 60 to col. 7, line 1. (emphasis added).

However, Dierke does not teach or suggest "intra-image prediction means for adaptively changing block size used for prediction based on a chroma format signal . . . for generating a prediction image . . . when the chroma format signal is 4:2:0 format . . . adaptively changes the block size and generates the prediction image on an 8 × 8 pixel basis, when the chroma format signal is 4:2:2 format . . . adaptively changes the block size and generates the prediction image on an 8 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in a longitudinal direction, and when the chroma format signal is 4:4:4 format . . . adaptively changes the block size and generates the prediction image on a 16 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in longitudinal and lateral direction," as recited in amended claim 1. (emphasis added). There is no indication that Dierke adaptively changes block size based on the signal "for generating a prediction image," nor generates a prediction image on a changed block size basis as recited in independent claim 1.

Zhou and Schroeder do not cure the deficiencies of Shen, Pohjola, and Dierke. Zhou and Schroeder do not teach or suggest "intra-image prediction means for adaptively changing block size used for prediction based on a chroma format signal . . . for generating a prediction image . . . when the chroma format signal is 4:2:0 format . . .

adaptively changes the block size and generates the prediction image on an 8 × 8 pixel basis, when the chroma format signal is 4:2:2 format . . . adaptively changes the block size and generates the prediction image on an 8 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in a longitudinal direction, and when the chroma format signal is 4:4:4 format . . . adaptively changes the block size and generates the prediction image on a 16 × 16 pixel basis in which blocks of 8 × 8 pixels are arranged in longitudinal and lateral direction," as recited in amended claim 1. (emphasis added).

For at least the reason that Shen, Pohjola, Dierke, Zhou, and Shroeder, taken alone or in combination, fail to teach each and every element of claim 1, no *prima facie* case of obviousness has been established with respect to claim 1. The rejection under 35 U.S.C. § 103(a) therefore should be withdrawn.

Although of different scope than claim 1, independent claim 14 distinguishes over Shen, Pohjola, Dierke, Zhou, and Shroeder for at least the same reasons as claim 1. Claims 2, 7-13, and 15 are allowable at least due to their dependence on independent claims 1 or 14.

In view of the foregoing remarks, Applicants submit that this claimed invention is neither anticipated nor rendered obvious in view of the references cited against this application. Applicants therefore request the Examiner's reconsideration of the application and the timely allowance of the pending claims.

If the Examiner believes a telephone conference would be useful in resolving any outstanding issues, the Examiner is invited to call the undersigned at (202) 408-4268.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: June 9, 2008

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Attachment: One clean version of amended Abstract.

ABSTRACT

The present invention is directed to an image information encoding apparatus adapted for performing intra-image encoding based on resolution of color components and color space of an input image signal. An intra prediction unit serves to adaptively change block size in generating a prediction image based on a chroma format signal indicating whether resolution of color components is one of 4:2:0 format, 4:2:2 format, and 4:4:4 format, and a color space signal indicating whether color space is one of YCbCr, RGB, and XYZ. An orthogonal transform unit and a quantization unit serve to also change orthogonal transform technique and quantization technique in accordance with the chroma format signal and the color space signal. A reversible encoding unit encodes the chroma format signal and the color space signal to include the encoded signals into image compressed information.